

WE CLAIM:

sub 1 1. A wafer enclosure for holding a plurality of wafers in a horizontal stacked configuration, the enclosure having a wall with an inwardly facing surface, an outwardly facing surface, an attachment opening in said wall, said opening having a diameter, a front opening for passing wafers to and from said enclosure, a door to close said front opening, and an elongate wafer engagement component for contacting the edge portions of wafers stacked in the enclosure, the wafer engagement component comprising a base portion that extends along the inwardly facing surface, an attachment portion integral with said base portion for insertion into said attachment opening, the attachment portion having a shank portion extending through the opening and a flange portion at the end of said shank portion opposite the base portion for engagement with the outwardly facing surface and for retaining the attachment portion in the attachment opening thereby securing the wafer engagement component to the wall, the flange portion configured to allow insertion of the attachment portion into the attachment opening by deflecting laterally the flange portion, the wafer engagement component engaging the wall at at least three non-linearly positioned points for providing a stable foundation for the wafer engagement component on the wall.

B 2. The wafer enclosure of claim ¹/₁, wherein the attachment opening has a periphery, the flange portion of each attachment portion having a cammed exterior surface for engaging the periphery and flexing the flange portion and shank as the attachment portion is urged into the attachment opening facilitating the attachment of the component to the wall.

3. The wafer enclosure of claim 1, further comprising an elastomeric O-ring positioned intermediate the base portion and the inwardly facing surface.

4. The wafer enclosure of claim 3, wherein the wall has an attachment opening corner portion, and wherein the flange portion further comprises a cammed interior surface opposite the cammed exterior surface, said cammed interior surface engaged with the attachment opening corner portion thereby urging the base portion toward the wall and compressing the O-ring between the wall and the base portion.

5. The wafer enclosure of claim 1, wherein the attachment opening comprises a plurality of circumferentially spaced fingers extending substantially normally from the base, each finger having a flange section whereby the flange sections of the plurality of fingers form the flange portion of the attachment portion, the flange portion having an outer diameter greater than the diameter of the attachment opening, each flange section having a cammed surface for deflecting each respective finger radially inward upon insertion into the attachment opening to decrease the diameter of the flange portion to substantially the diameter of the opening.

6. The wafer enclosure of claim 5, further comprising an elastomeric O-ring positioned intermediate the base and the inwardly facing surface.

7. The wafer enclosure of claim 6, wherein the wall has an attachment opening corner portion, and wherein each flange section comprises a cammed interior surface, said cammed interior surface engaged with the attachment opening corner portion



thereby urging the base portion toward the wall and compressing the O-ring between the wall and the base portion.

8. The wafer enclosure of claim 6, wherein the wafer engaging component is a wafer cushion and comprises a plurality of fingers extending from the base portion away from the wall for engaging wafers held in the enclosure.

9. The wafer enclosure of claim 6, wherein the door comprises an interior wall and an exterior wall and wherein the attachment opening is on the interior wall.

10. The wafer enclosure of claim 1, wherein the wafer engagement component has an extension member integral with the base portion and extending therefrom, the extension member having an intermediate section spaced from the wall and a contact portion in contact engagement with the inwardly facing surface of the wall whereby the contact portion is one of the at least three non-linearly aligned contact portions.

11. The wafer enclosure of claim 11, wherein the base portion has a lower surface in confronting relationship with the wall, an opposite top surface, and a pair of sides intermediate the lower surface and the top surface, and wherein the wafer engagement component comprises a plurality of wafer engaging fingers extending laterally away from the base portion at one of the sides, the fingers spaced from the wall and having a wafer engaging portion separated from the wall.

17

18

13. A wafer enclosure comprising an enclosure portion and a door, the enclosure portion with a front having a door frame defining a front opening for insertion and removal of wafers, the enclosure portion having a plurality of horizontally oriented slots vertically stacked for receiving a plurality of axially aligned horizontally oriented wafer, the door configured for closing the open front and latching to the door frame, the door having an interiorly facing side and a first and a second upright cushion attached to the door at said interiorly facing side, each of the upright cushions having an elongate base portion and plurality of parallel wafer engaging fingers extending from said base portion, each sequential wafer engaging fingers engaging alternate ones of the axially aligned horizontally oriented wafers and wherein the wafers engaged by the first cushion are different than the wafers engaged by the second cushion.

14. The wafer enclosure of claim 13, wherein each wafer engaging finger of each cushion extends laterally from the base in a first direction and wherein each wafer cushion further comprises at least one integral extension member extending laterally from the base portion in the first direction, and wherein said extension member has an intermediate portion and a door contact portion opposite the base portion whereby when wafers engage said wafer engagement fingers the door contact portion bears against the door thereby precisely controlling the engagement of the wafer engagement fingers with the wafers.

15. The wafer enclosure of claim 14, wherein each cushion has a plurality of integral extension members and wherein said plurality of wafer extension members are positioned intermediate pairs of wafer engagement fingers.

19

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16. A wafer enclosure comprising an enclosure portion and a door, the enclosure portion having a front with a door frame defining a front opening for insertion and removal of wafers, the enclosure portion configured for receiving a plurality of axially aligned horizontally oriented wafers, the door configured for closing the open front, the door having an interiorly facing side and a first upright cushion attached to the door, said first cushion having an elongate base portion attached to the door and a plurality of parallel wafer engaging fingers extending from said base portion in a first direction, each wafer engaging finger having an finger portion and a wafer engaging portion, the wafer engaging portion laterally displaced in a first direction from the base portion, the cushion further having a door contacting member displaced laterally in the first direction from the base portion for providing support to the wafer engagement fingers.

17. The wafer enclosure of claim 16, further comprising another plurality of parallel wafer engaging fingers extending from said base portion in a second lateral direction opposite from the first.

18. A wafer enclosure for holding a plurality of wafers in a horizontal stacked configuration, the enclosure having a wall with an inwardly facing surface, an outwardly facing surface, an attachment opening in said wall, said opening having a diameter, a front opening for passing wafers to and from said enclosure, a door to close said front opening, and an elongate wafer engagement component for contacting the edge portions of wafers stacked in the enclosure, the wafer engagement component comprising a base portion that extends along the inwardly facing surface, an attachment portion integral with said base portion for insertion into said attachment opening, the attachment portion having a shank portion extending through the opening and a flange portion at the end of said shank portion opposite the base portion for engagement with the outwardly facing surface and for retaining the attachment portion in the attachment opening thereby securing the wafer engagement component to the wall, the flange portion configured to allow insertion of the attachment portion into the attachment opening by deflecting laterally the flange portion, and an elastomeric o-ring positioned on the shank portion for providing sealing between the wafer engagement member and the wall.

19. The wafer enclosure of claim ¹⁸~~19~~, wherein the wafer engagement member is a wafer cushion.

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